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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,657	09/12/2003	Lakshminath Dondeti	120-306	9491
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EXAMINER				
CHAI, LONGBIT				
ART UNIT		PAPER NUMBER		
2131				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/661,657

Applicant(s)

DONDETI ET AL

Examiner

LONGBIT CHAI

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 6-12, 15, 23 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6-12, 15, 23 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Presently, pending claims are 1, 4, 6 – 12, 15, 23 and 26.

Response to Argument

2. Examiner notes a PROSECUTION IS HEREBY REOPENED due to a new ground of 35 U.S.C. 101 rejections for claim 23.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 23 is rejected under 35 U.S.C. 101 because the claim is directed to software per se which is a non-statutory subject matter. Examiner notes for an apparatus claim, wherein at least one recited element must be hardware; however, all of the three elements such as a key table, a transform logic and forwarding logic, as recited in the claim, would have been reasonably interpreted in light of the disclosure by one of ordinary skill as including software alone – i.e. it may be intended to claim merely as a software module component / element as being not limited to any hardware element that indicates, in addition, although various components were shown as functional blocks, it is understood that these functions may be implemented in hardware, software, or any combination thereof, and no particular delineation of functionality is part of the invention (SPEC: Page 22 Line 22 – 24).

Double Patenting

The nonstatutory provisional double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 4, 6 – 12, 15, 23 and 26 are rejected under the judicially created doctrine of obviousness-type provisional double patenting as being unpatentable over claims 1, 6 – 9 and 11 of copending application 10/661,903. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 4 and 11 of the instant application are envisioned by the claims of the copending application that contain all the limitations of claims of the instant application and as such claims of the instant application are not patently distinct from the earlier copending application claim and as such are unpatentable for obvious-type provisional double patenting.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4, 6, 8, 9, 11, 12, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent 2002/0154635), which incorporates the reference of **Caronni et al.** (U.S. Patent 6,970,941) as shown in (Liu: Para [0002]), in view of Shimbo et al. (U.S. Patent 6,185,680).

As per claim 1 and 12, Liu / Caronni teaches a method of securing packet data transferred between a first and second member of a private network over a backbone, the backbone operating according to a routing protocol (Caronni : Column 2 Line 14 – 35 and Column 4 Line 38 – 52), the method comprising the steps of:

receiving a packet from any one of a plurality of members of a private network, the packet including a private network address comprising a source address and a destination address, the packet further including a payload (Caronni : Column 11 Line 37 – 61 & Liu: Para [0025]: enabling communications between a first private network and a second private network configured from nodes in a public backbone network);

apportioning the packet into a first portion and a second portion, wherein the first portion includes fields of the packet used for transmission of the packet according to the protocol of the backbone including the private network address and the second portion includes payload

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(Caronni : Figure 2B & Column 12 Line 11 – 19: the first portion is the SRC/DST real address according the protocol of the backbone & Liu: Para [0025]).

Liu / Caronni does not disclose expressly appending a gateway source address with the source address of the packet to the second portion to generate a group header.

Shimbo teaches appending a gateway source address with the source address of the packet to the second portion to generate a group header (Shimbo: Column 26 Line 28 – 36 & Caronni : Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6 and Column 12 Line 11 – 19, Column 6 Line 8 – 10 Figure 2B : (a) Shimbo teaches appending a gateway source address with the source address of the packet to the second portion (Shimbo: Column 26 Line 28 – 36 & Caronni : Figure 2B & Column 12 Line 11 – 19) and (b) Caronni teaches a Supernet is indeed a private network that has its own internal addressing scheme (Caronni: Column 6 Line 8 – 10) and a Supernet ID is included in the packet transformation qualified as a Group ID (Caronni: Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Shimbo within the system of Liu because (a) Liu teaches a mechanism to extend private networks onto a public infrastructure (Liu: Para [0015] and [0018]) / Caronni teaches modifying a IP packet format so that any type of delivery scheme may be assigned to any address or group of addresses (Caronni: Column 3 Line 19 – 25) and (b) Shimbo teaches providing an efficient, flexible and secured method to protect the data communication in any type of networks such as hierarchical organized or mobile computing environment by using a security gateway (Shimbo: Column 3 Line 39 – 50).

transforming the second portion of the packet according to a group security association associated with the private network to provide a transformed portion which includes a transformed group header (Caronni : Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column

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11 Line 37 – 43: the mappings of the internal / private address, known as node ID, which is considered as a part of the group security association and the Supernet contains a modification to the IP packet format that can be used to separate network behavior from addressing and besides, the security association (SA) is related to Authentication Header (AH));

appending the first portion of the packet to the transformed portion to provide a transformed packet (Caronni : Figure 2B & Column 12 Line 11 – 19: the first portion is the SRC/DST real addresses according the protocol of the backbone is appended to the second portion of SRC/DST virtual addresses); and

transmitting the transformed packet to the backbone using the private network address (Caronni : Column 3 Line 17 – 23).

As per claim 23, Liu / Caronni teaches an apparatus at a node for transforming packets for forwarding between a plurality of members of a group communicating on a scalable private network over a backbone, each of the plurality of group members communicating with the backbone via respective gateways; wherein the backbone operates according to a protocol (Caronni : Column 2 Line 14 – 35 and Column 4 Line 38 – 52), the apparatus comprising:

a key table, the key table including a security association for each group that the node is a member (Caronni : Column 7 Line 5 – 33 : VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as a part of key table);

transform logic operable to apply a security association to only a portion of each packet transmitted over the private network associated with each group to ensure that a remaining portion of the packet enabling communication over the backbone according to the protocol is preserved (Caronni : Figure 2B & Column 12 Line 11 – 19, Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: only Supernet virtual address contains a modification

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to the IP packet format that can be used to separate network behavior for forwarding communication between members of the group using an private network address associated with the group and the portion of SRC/DST real address according to the protocol of the backbone is preserved); and

forwarding logic for forwarding communication between members of the group using an private network address associated with the group (Caronni : Column 3 Line 17 – 23).

transform logic comprising means for modifying packets received from a source member of the group for transfer on a private network over the backbone by: extracting a private network address header from a received packet, the private network address header including a source and destination address (Caronni: Column 6 Line 8 – 10, Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6: a Supernet is indeed a private network that has its own internal addressing scheme for transfer on a private network over the backbone).

However, Liu / Caronni does not disclose expressly appending to the received packet, a group header including a group identifier associated with the private network and a gateway address associated with a source member; applying a security association to the received packet including the group header to provide a modified packet; appending the private network address header to the modified packet to provide a transformed packet, where only information in the transformed packet that enables communication over the backbone is unsecured.

Shimbo (& Caronni) teaches appending to the received packet, a group header including a group identifier associated with the private network and a gateway address associated with a source member; applying a security association to the received packet including the group header to provide a modified packet; appending the private network address header to the modified packet to provide a transformed packet, where only information in the transformed packet that enables communication over the backbone is unsecured (Shimbo: Column 26 Line

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28 – 36 & Caronni : Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6 and Column 12 Line 11 – 19, Column 6 Line 8 – 10 Figure 2B : (a) Shimbo teaches appending a gateway source address with the source address of the packet to the second portion (Shimbo: Column 26 Line 28 – 36 & Caronni : Figure 2B & Column 12 Line 11 – 19) and (b) Caronni teaches a Supernet is indeed a private network that has its own internal addressing scheme (Caronni: Column 6 Line 8 – 10) and a Supernet ID is included in the packet transformation qualified as a Group ID (Caronni: Column 7 Line 7 – 13 and Column 9 Line 1 – 5 & Figure 6 and (c) ESP, as per IPsec protocol feature, can be used to provide confidentiality, authentication and integrity and besides, the key information included in the packet header can be used to secure information between peer-to-peer (using the same key) to protect private network addressing information except the backbone public network address that uses an open network addressing scheme (i.e. not secured) (Caronni: Figure 6 and Column 9 Line 1 – 39).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Shimbo within the system of Liu because (a) Liu teaches a mechanism to extend private networks onto a public infrastructure (Liu: Para [0015] and [0018]) / Caronni teaches modifying a IP packet format so that any type of delivery scheme may be assigned to any address or group of addresses (Caronni: Column 3 Line 19 – 25) and (b) Shimbo teaches providing an efficient, flexible and secured method to protect the data communication in any type of networks such as hierarchical organized or mobile computing environment by using a security gateway (Shimbo: Column 3 Line 39 – 50).

As per claim 4 and 26, Liu / Caronni as modified teaches the step of transforming is performed at the first member of the private network (Caronni : Column 2 Line 27 – 32: terminal computer device D₁).

As per claim 6, Liu / Caronni as modified teaches the first portion of the packet comprises a first header, the first header having a type, source and destination, and wherein the group header comprise a group type, the gateway source address, group address and wherein the step of generating a group header includes the step of copying the type of the first header to the group type (Shimbo: Column 9 Line 15 – 39, Column 26 Line 28 – 36 & Caronni : Figure 2B & Column 12 Line 11 – 19, Column 3 Line 21 – 23 and Column 5 Line 20 – 23: the next header field identifies the type of header immediately following the current header and thus it can be obtained by copying the header type from the previous "next header field").

As per claim 8, Liu / Caronni as modified teaches the group security association is an Internet Protocol Security transform (Caronni : Column 9 Line 28: IPSec).

As per claim 9, Liu / Caronni as modified teaches the group security association is an Encapsulated Security Protocol.(Caronni : Column 9 Line 28: ESP protocol).

As per claim 11, Liu / Caronni as modified teaches receiving, at each member of the private network, a key corresponding to the private network group security association (Caronni : Column 10 Line 26 – 29: KMS = Key Management Server).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent 2002/0154635), in view of Shimbo et al. (U.S. Patent 6,185,680), and in view of Alkhatib et al. (U.S. Patent 2003/0233454).

As per claim 15, Liu does as modified not disclose expressly transforming is performed at a gateway device disposed between one of the at least two members of the virtual private network and the communication link.

Alkhatib teaches transforming is performed at a gateway device disposed between one of the at least two members of the virtual private network and the communication link (Alkhatib : Par [0049] Line 14 – 17 and Para [0017] Line 1 – 8: (a) an edge device is disposed between the first member of the private network and the backbone, and wherein the step of transforming is performed at the edge device and (b) a gateway, that changes and encapsulates the destination address, can be considered as an edge device, which also appears in the specification of the instant application (SPEC: Page 3 Line 14: Customer Edge device may also be referred to as a gateway device).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Alkhatib within the system of Liu because (a) Liu teaches a mechanism to extend private networks onto a public infrastructure (Liu: Para [0015] and [0018]) and (b) Alkhatib teaches providing a method to create a binding between public address and private address when communicating over a private network (Alkhatib : Para [0019]).

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent 2002/0154635). **Liu** (U.S. Patent 2002/0154635), which incorporates the reference of **Caronni** et al. (U.S. Patent 6,970,941) as shown in (Liu: Para [0002]) in view of Shimbo et al. (U.S. Patent 6,185,680).

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As per claim 7, Liu as modified discloses the first header further includes a length, the group header further includes a group length, and wherein the method includes the steps of copying the length to the group length (Caronni : Column 7 Line 15 – 16 : Examiner notes any of the standard protocol format obviously conforms to standard T / L / V fields (Type, Length, and Value) as a complete layout of a protocol specification).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent 2002/0154635), in view of Shimbo et al. (U.S. Patent 6,185,680), and in view of Boden et al. (U.S. Patent 6,330,562).

As per claim 10, Liu as modified does not disclose expressly the group security association is an Internet Key Encryption.

Boden teaches the group security association is an Internet Key Encryption (Column 2 Line 4 – 5: IKE scheme).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Boden within the system of Liu because (a) Liu teaches a mechanism to extend private networks onto a public infrastructure over a VPN (Virtual Private Network) (Liu: Para [0015] and [0018]) and (b) Boden teaches providing a data model for abstracting customer-defined VPN security policy information to dynamically negotiate, create, delete, and maintain secure connections at the IP level with other VPN nodes (Boden : Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 571-272-3788. The examiner can normally be reached on Monday-Friday 9:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Longbit Chai/

Longbit Chai Ph.D.

Primary Examiner, Art Unit 2131

5/16/2008